

A. INTRODUCTION

This chapter discusses the potential for the presence of hazardous materials in soil and/or groundwater and for impacts associated with the redevelopment of potential and projected development lots within the Alexander Street Master Plan Area. This chapter also summarizes known conditions based upon available information, as discussed below.

The Brownfields Opportunity Area (BOA) Plan, a related action being considered by this analysis, reflects the existing conditions of the Master Plan Area, and is intended to establish priorities for further analysis and remediation of sites based on the known or suspected presence of contaminants, as well as the projected future land uses of the subject parcels. The BOA program enables the bundling of multiple sites for clean-up assessment purposes. Since the implementation of the Proposed Action would require the assemblage and bundling of Master Plan Area tax parcels into coherent development parcels, the BOA would facilitate development by providing coordinated and focused remediation and other related actions to ensure that hazardous materials do not pose future health or environmental threats.

Generally, hazardous materials are defined as those substances that pose a threat to human health and/or the environment. These substances include, but are not limited to, volatile organic compounds (VOCs) often associated with gasoline filling stations and dry cleaning establishments; semi-volatile organic compounds (SVOCs) often associated with fuel oil, coal and ash; polychlorinated biphenyls (PCBs) often associated with utilities and transformers; pesticides and herbicides often associated with vegetated land; and heavy metals often associated with manufacturing processes. The presence of hazardous materials threatens human health or the environment only when exposure to those materials can occur. The most likely routes of human exposure are breathing of volatile and semi-volatile compounds or particulate-laden air released during soil disturbing activities and dermal contact. The potential adverse health effects from the anticipated contaminants are diverse. This chapter includes procedures to reduce the potential for unnecessary and unacceptable exposure to these contaminants.

Hazardous materials are of concern when manufacturing districts are rezoned to allow for commercial, residential or institutional use, as in the case of the proposed actions. Potential contaminants of concern were identified for all of the projected and potential development lots. Although the proposed actions would be unlikely to introduce new activities and/or processes using hazardous materials, uncontrolled demolition and excavation activities associated with the development of lots could increase pathways by exposing existing sub-surface contaminated materials.

The hazardous materials studies completed for this analysis have not ruled out the potential presence of hazardous materials on (or proximate to) any of the projected or potential development lots. A complete list of the development sites and the nature of the environmental condition that may have impacted each lot is provided later in this chapter. Prior to construction, further investigation would be performed on each development site to determine the presence and nature of contaminants of concern and the proper remedial and/or health and safety measures that would be employed before or during redevelopment.

B. METHODOLOGY

This chapter is based on a review of historic maps, databases, previous reports, and a survey of regulatory records, as well as limited street-level site inspections to assess the potential presence of hazardous materials in soil and/or groundwater and in existing buildings, and to assess the potential for impacts associated with the redevelopment of the Master Plan Area.

For each development lot, the following research was conducted:

- A visual inspection of the site (from sidewalks and public rights of way) to identify uses and assess existing conditions, such as the presence of fill pipes, vent caps, transformer vaults, dumping and abandoned drums, or other evidence of petroleum usage or hazardous materials;
- An evaluation of the land use history using available historical fire insurance maps going back to approximately 1900; and
- A review of U.S. Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC) databases regarding hazardous materials. These records assisted in identifying the use, generation, storage, treatment, disposal, or release of hazardous materials.

Toxics Targeting, Inc. of Ithaca, New York, was retained to provide comprehensive information regarding the regulatory status of the properties comprising the Master Plan Area and the surrounding area. This information included records from databases maintained by the EPA and NYSDEC. These records identify the use, generation, storage, treatment and/or disposal of hazardous material and chemicals, as well as releases of such materials which may impact the Master Plan Area.

In addition to the above, this chapter reflects the review of the following reports:

- Phase 1 Hazardous Waste Assessment Alexander Street Waterfront Brownfields Project, February 2001, Edwards and Kelcey, Inc.;
- ESA Summary Report, Alexander Street Waterfront Brownfields Redevelopment Area, August 2004, PS&S Engineering;
- Summary Report of Subsurface Investigation Performed on the Habirshaw Property Located at 35 Alexander Street, May 1999, Ecosystems Strategies Report; and
- Groundwater Assessment Report, H. Lockwood Property, 59 Babcock Place, December 1998, Tristate Environmental Consultants

Further, an area-wide summary was prepared of topographical, geological and hydrogeological conditions using City of Yonkers and U.S. Geological Survey sources. Together with the information developed for each lot, a determination was made of the potential hazardous materials condition on the lot. Factors that were considered when making this determination included the likelihood, severity and proximity of the potential hazardous materials condition to the lot, as well as geological or hydrogeological conditions that may have affected the migration of the hazardous material.

For sites that warrant further analysis, as described later in this chapter, this additional analysis would be required to be undertaken by developers proposing the redevelopment of the subject parcels under the Alexander Street Master Plan or Urban Renewal Plan. The procedure for these further investigations would include not be limited to: determining whether (and how) construction activities would disturb the area, conducting additional research to determine if there are existing data on site conditions (e.g., subsurface investigations conducted by the property owner), and whether remediation had already

occurred (such as spill closure reports). Together, this additional analysis would guide determination of whether subsurface testing should be done.

C. POTENTIAL CONTAMINANTS OF CONCERN

Soil and groundwater can become contaminated as a result of past or current activities in the subject area or on adjacent properties. Many past and current industrial activities use, store, or generate contaminated materials that can be spilled, dumped, or buried nearby. Other activities common in mixed-use neighborhoods—such as gas stations and auto repair shops—can also result in contamination due to improper management of raw product and/or waste materials.

Subsurface soil and groundwater contamination can remain undetected for many years, posing no threat to nearby workers, residents, passersby, or other receptors. Excavation, earthmoving, dewatering, and other construction activities can, however, expose the contaminants, providing a pathway of exposure and introducing potential risk to construction workers and others nearby if such contaminants are not properly managed. In this way, construction under the Master Plan might encounter contaminated soil and/or groundwater.

Based on the types of contaminants that are typically found in metropolitan New York—including those associated with rail yards—some of the potential contaminants of concern are described below. The list provides a summary description and potential sources of the categories of contaminants and is not a comprehensive list of all contaminants that may be encountered:

- Volatile organic compounds (VOCs). These include aromatic and aliphatic compounds such as benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertiary butyl ether (MTBE), which are found in petroleum products (especially gasoline) and coal tars, which are waste products of manufactured gas plant (MGP) sites and chlorinated compounds, such as tetrachloroethene (also known as perchloroethylene or “perc”), and trichloroethene, which are common ingredients in solvents, degreasers, and cleansers. VOCs represent the greatest potential for contamination issues since, in addition to soil and groundwater contamination, they can generate organic vapors. Dry cleaners are common sources of tetrachloroethene contamination. Bulk storage terminals, other facilities with large petroleum usage, and former or current gasoline stations are the most likely sources for substantial VOC contamination from petroleum products. Auto repair can also lead to similar concerns, as can maintenance or fuel facilities at rail yards (although there are now established procedures for the proper storage, handling, use, and disposal of these materials).
- Semivolatile organic compounds (SVOCs). The most common SVOCs encountered are polycyclic aromatic hydrocarbons (PAHs), which are constituents of partially combusted coal or petroleum-derived products, such as ash, coal tar and petroleum. PAHs are commonly found in urban fill material.
- Polychlorinated biphenyls (PCBs). Commonly used as a dielectric fluid in transformers, some underground high-voltage electric pipelines, and hydraulically-operated machinery, PCBs are of special concern at electrical transformer and rail yard/train maintenance locations where leakage into soil may have occurred. PCBs and/or PCB-containing materials were once widely used in manufacturing and industrial applications (e.g., hydraulic lifts, transformers, and plastic manufacturing.). PCBs tend to travel only short distances in soil, except in unusual circumstances (e.g., large spills of PCB-containing oils over many years). PCBs are often found in urban fill material.

- Pesticides, herbicides, and rodenticides. These are commonly used to control rodents and/or insects, and vegetation in vacant structures or in vegetated lots. They may also be used in rail yards, particularly between the tracks.
- Metals (including lead, arsenic, cadmium, chromium, and mercury). Metals are often used in smelters, foundries, and metal works and are found as components in paint, ink, petroleum products, and coal ash. These metals tend not to travel far in soil; therefore, they would be of greatest concern at the site where they were generated. Metals, at levels above natural background levels, are frequently present in fill material throughout the New York metropolitan area.
- Asbestos. In addition to asbestos used for fireproofing or other purposes within existing structures, utility lines beneath some streets or in rail yards may be coated with asbestos or encased in “transite.” There are well-defined regulatory programs to manage asbestos during demolition and construction work.
- Fuel oil and gasoline storage tanks. Numerous residences and businesses within the subject area currently have, or once had, both known and undocumented above-ground storage tanks (ASTs) or underground storage tanks (USTs) for fuels, including heating oil and gasoline. Some of these tanks may have been removed, and others, although no longer in use, may remain buried in place. Fueling facilities are also associated with rail yards. Some of the tanks are known to have leaked, and others have possibly leaked with no evidence of a spill to date. Some of the spills have been cleaned up in accordance with state regulations, but others have not because they have not yet been discovered or because cleanup, which can take several years, is ongoing. However, both the regulatory process and technologies are in place to address removal of tanks and cleanup of any associated releases.

Table 10-1 lists the current or historical land use or database listing and indicates which classes of chemicals may have impacted soil and/or groundwater conditions. In parking lots or vacant lots, where illegal dumping of hazardous materials may have occurred, all of the classes of chemicals may have impacted soil and/or groundwater conditions.

Table 10-1

Recognized Environmental Conditions and Associated Classes of Chemicals

Recognized Environmental Condition	Associated Classes of Chemicals
Filling Stations	V, S, M
Manufactured Gas Plant	V, S, M
Gasoline Tanks	V, S, M
MOSF Listing	V, S, M
Gasoline Vent Pipe/Fill Cap	V, S, M
Monitoring Wells	V, S, M
Oil Change Shops	V, S, M
Utilities	V, S, PCB, M
Active Spill Listing	V, S, PCB, M
RCRA Generator	V, S, PCB, P, M
Fuel Oil Tanks (PBS Listing)	V, S, M
Auto Repair	V, S, PCB, M
Fuel Oil Vent Pipe / Fill Cap	V, S, M
Machine Shop	V, S, PCB, M
Substations	S, PCB, V, M

Table 10-1

Recognized Environmental Conditions and Associated Classes of Chemicals

Recognized Environmental Condition	Associated Classes of Chemicals
Stored Drums	V, S, PCB, P, M
Auto Sales	V, S, PCB, M
General Factory	V, S, PCB, P, M
General Manufacturing	V, S, PCB, P, M
Paint Stores	V,S,M
Lumber Yard	V, S, P, M
Closed Spill Listing	V, S, PCB,M
Parking Lot	V, S, PCB, P, M
Vacant Lot	V, S, PCB, P, M
Transformer	V, S, M, PCB
Notes: V = VOCs, S = SVOCs, PCB = PCBs, P = pesticides, M = metals	

D. EXISTING CONDITIONS

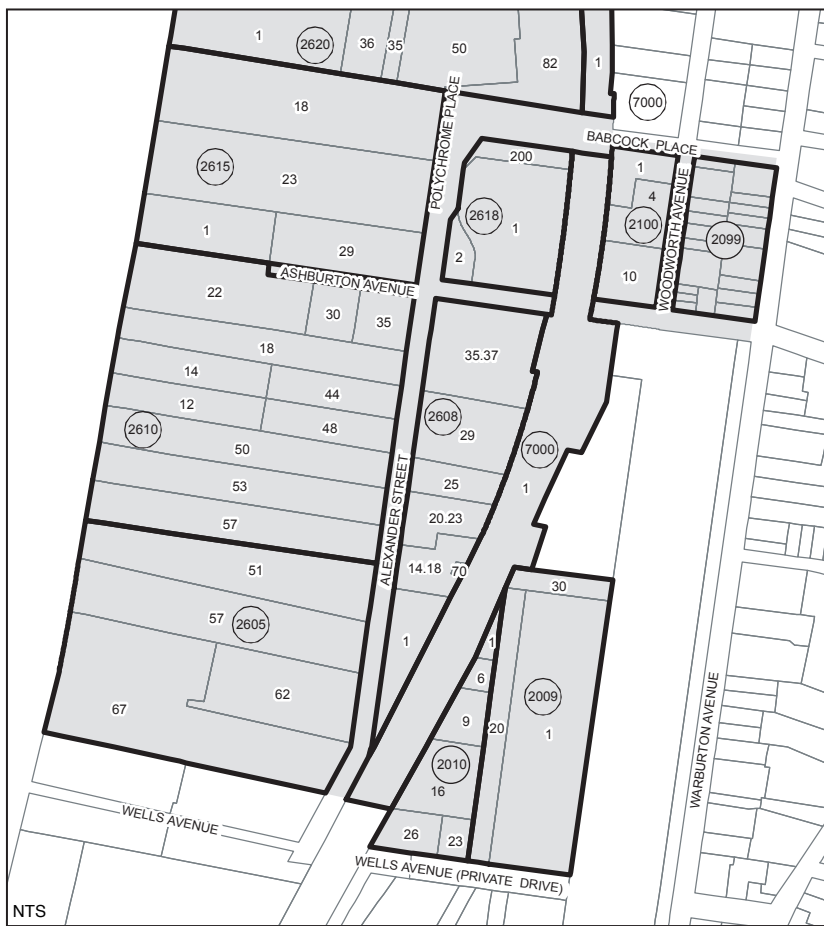
In the early part of the nineteenth century, Yonkers was still primarily an agricultural community, but the waterfront began to be developed and numerous docks and other loading facilities were constructed to facilitate the increase in trade. The opening of the Hudson River Railroad in 1849 along the edge of the Hudson River dramatically spurred the growth rate of the city by providing a dependable means of transportation, and by the 1850's, Yonkers was transformed from an agricultural to an industrial center. A number of industries were established, including the Otis elevator factory.

In the period between 1886 and 1898, downtown Yonkers was primarily residential, with some commercial development. In the 1950's many of the residential structures were converted into commercial and industrial use. This conversion occurred along Atherton Avenue with a few residential structures remaining along Warburton Avenue.

By the 1970s most of the Master Plan Area, with the exception of Trevor Park and JFK Marina Park, was completely industrial development with a few areas of commercial businesses. Many of the structures were demolished to allow for parking lots. Downtown Yonkers continued to be mainly an industrial city beyond the mid-1980s.

The topography of the Master Plan Area is mostly flat as the land is partly urban fill along the bank of the Hudson River. The elevation increases inland towards the residential neighborhoods of Yonkers. Based on reports compiled by the U.S. Geological Survey, the area lies at an elevation ranging from approximately 10 to 20 feet above the National Geodetic Vertical Datum of 1929 (an approximation of mean sea level). The New York State Geological Survey 'Surficial Geological Map of New York' 1989 describes the lithology as lacustrine sand of well sorted, stratified, generally quartz sand associated with large bodies of water. Groundwater most likely flows in a westerly direction toward the Hudson River. However, actual groundwater flow at the development sites can be affected by many factors, including past filling activities, underground utilities, and other subsurface openings or obstructions such as basements, underground parking garages and subway lines, bedrock geology, and other factors beyond the scope of this study.

Figure 1-6 in Chapter 1, "Description of the Proposed Action," provides a map showing the proposed development parcels, and Figure 10-1 provides a map showing the blocks and lots in the subject area.



Inset 1



Inset 2

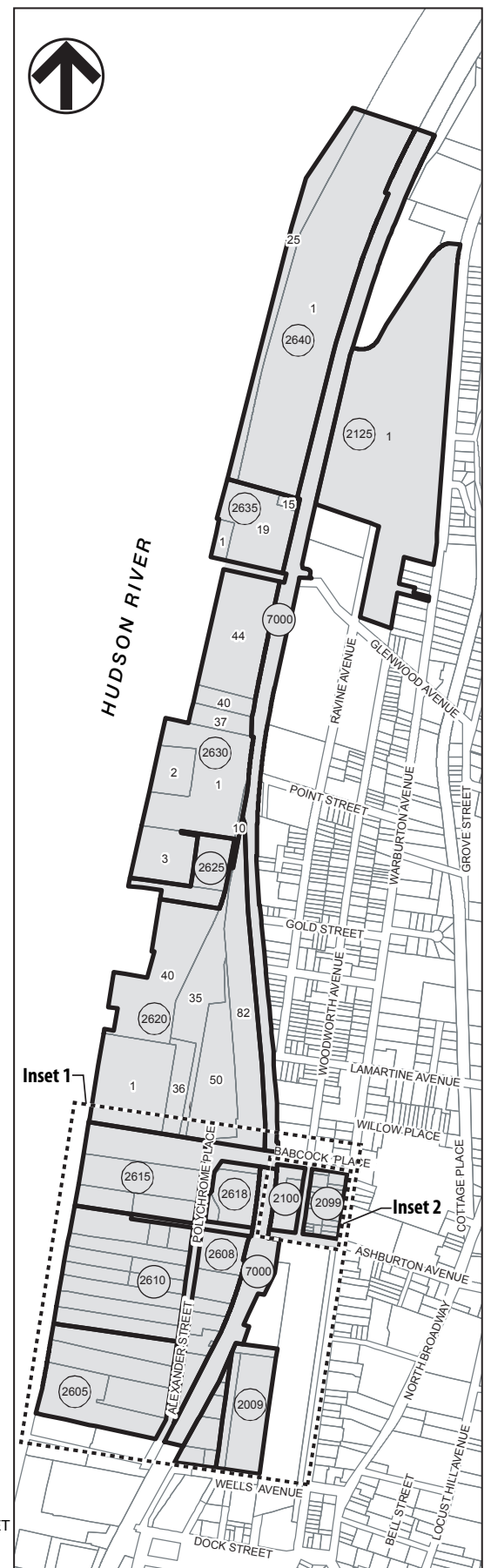
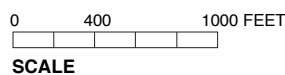
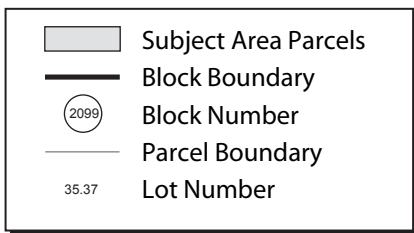


Figure 10-1

Existing Parcel Boundaries

Table 10-2 provides a summary of past historic parcel uses and the potential condition (s) that may have affected each lot.

The following is a summary of site histories within the subject area, organized by tax block and lots according to the parcel identification system developed by the City of Yonkers Assessors Office. At the end of each history, a summary of the potential classes of chemicals that may have affected the lots is provided.

PROJECTED DEVELOPMENT SITES

Block 2009/2010

Block 2009 and 2010 are located on the east side of the Metro North railroad tracks. The sites are presently largely vacant. No features of any of these sites were listed in the Toxics Targeting database review. The site at 29 Wells Avenue, on Block 2009, previously contained machine and power shops as recently as 2001, and previously a foundry of the Otis Elevator Company. At 21 Atherton Street, on block 2010, prior to 1978 were a coal shed, boiler engine room and machine shop at the manufacturer of steam and gas fitters tools.

This site is currently being remediated under the Brownfield Cleanup Program. Environmental concerns would include petroleum, metals, solvents, and urban fill.

Block 2100/2099

Block 2100 is located east and adjacent to the Metro North railroad tracks. A manufactured gas plant occupied the site until sometime between 1917 and 1942 and was replaced by an auto repair shop and paint shop along Woodworth Avenue. Ecosystems Strategies' report, (May 1999) states that site investigations have determined the presence of creosote and heavy petroleum on Block 2099 associated with the former site usage as a coal gasification plant adjacent to the western side of Block 2099. Commonly associated with manufactured gas plants are PAH contamination and high levels of coal tars and heavy metals in the subsurface. The 1957 historic map shows a laundry at lot 31, the most northerly of Block 2099, which may have used tetrachloroethylene (PCE) as a solvent. Greyston remediated the site at Block 2099, Lots 24, 25, and 26 under the oversight of the New York State Department of Environmental Conservation (NYSDEC) through the Voluntary Cleanup Program. Environmental concerns include coal tar, metals, PCE, petroleum, and urban fill.

Block 2125 Trevor Park

Block 2125 is presently Trevor Park and the Hudson River Museum. Historical maps show no past industrial use of the site. Environmental concerns would include the presence of urban fill.

Block 2605 Lots 62, 67

Block 2605 contains the North Yonkers pump station and the Beczak Environmental Education Center. Past industrial usage has included a coal yard, lumber yard, cement storage, and a sewage treatment plant. Environmental concerns include petroleum, SVOCs, metals, sewage sludge, and urban fill.

Block 2608 Lot 1 Yonkers City Jail

Block 2608 Lot 1 contains the Yonkers City Jail, at 26 Alexander Street. Two spills associated with the City Jail were reported: on January 19, 1993 a spill was caused by a tank overfill (the type of tank was not reported). An unknown quantity of fuel oil was spilled onto soil and pavement during filling activities. The cleanup was listed as March 19, 1993. The second spill was reported on February 9, 1993, due to similar filling activities. The closure date for this spill was listed as April 5, 1993. The Yonkers

City Jail was also listed in the Petroleum Bulk Storage database with one 2,500 gallon underground fuel oil tank. No installation date was listed; the tank was tested in September 1990.

Block 2608 Lots 20, 23 Patclin Chemicals

Lots 23 and 20 of Block 2608 were previously occupied by the Patclin chemical site. Edwards and Kelcey Phase I from 2001 states that chemical mixing may have resulted in discharges to the subsurface and storm drains via on-site floor drains. Heating oil ASTs and a 2,000 gallon UST were observed on site. Several spills were reported on the site between 1994 and 2001. Environmental concerns include chemicals used in the manufacturing process which may include solvents, various petroleum products, and other organic and inorganic chemicals.

Block 2608 Lot 14.18

On Block 2608, Lot 14.18, a foundry is shown on historic maps in 1957. A UST and spill were reported in 1995 due to a test tank failure. A PS&S Engineering fact sheet from 2004 states that the site was being used as a bus parking and maintenance facility with a 2,000 gallon diesel UST and a 1,000 gallon unknown UST on the site. Environmental concerns include diesel, other petroleum products, heavy metals, and urban fill.

Block 2608 Lots 35.37, 29 Block 2615 Lots 1, 23, 29 Sun Chemical

Block 2608, Lots 35.37, 29 and Block 2615 Lots 1, 23, 29 were occupied by Polychrome Corporation and subsequently Sun Chemical Corporation, where nine USTs were closed in 1991. The site was identified as having hazardous waste activity in 1980 as a Large Quantity Generator for solvent waste, with five spills reported between 1987 and 1990. Earlier uses of the site included a lumber yard and docks with coal storage. The USTs contained fuel oil and gasoline and four ASTs are listed as contained sulfuric acid and sodium hydroxide. Following tank closures in early 1991, the EPA hazardous waste number was cancelled. Environmental concerns include solvents, fuel oil, gasoline, heavy metals, and urban fill.

Block 2610 Lots 12, 14, 22, and the Western Half of 18

Lots 12, 14, 22, and the western half of 18 of Block 2610 are land reclaimed from the river after 1991 and consist of fill material. It is unlikely that detailed records exist of the material used and investigation has shown urban fill on adjacent sites to contain cinders, slag and ash with elevated levels of PAHs and metals.

Block 2610 Lots 30, 35, 44, 48 and the Eastern Half of 18

The central section of Block 2610 was previously a tank farm and petroleum distribution center with associated site permits. The historic map from 2001 shows 11 tanks of varying sizes on Lots 30, 35, 18 and 44, and lot 48 as a parking lot with no tanks present. A number of spills occurred prior to demolition of the ASTs in 2003. Site investigation and remediation started in 2003. It is understood that remediation is ongoing under NYSDEC oversight. Environmental concerns include petroleum-related products and urban fill.

Block 2610 Lots 50, 53, 57

The southern section of block 2610 previously contained a small auto repair shop on lots 50 and 53. The lots are currently used for manufacturing lighting components. According to the PS&S environmental fact sheet from 2004, the site was listed on the AST database with some storage believed to be of solvents. Earlier historical maps show the site as vacant land, not having the heavy industrial past of

some of the other development areas. Environmental concerns include solvents, gasoline, auto-related oils and lubricants, and urban fill.

Block 2618

Block 2618 was formerly occupied by a gas and light company with oil tanks and coal storage on the site. Ecosystems Strategies 1999 report details fill material with elevated levels of lead and mercury in soils between 1.5 and 5 ft. Environmental concerns include heavy metals, coal tar, petroleum, and urban fill.

Block 2620 Lots 35, 40, Blocks 2625 and 2630 Lots 1 to 3, 10 BICC Former Phelps Dodge

Block 2620, Lots 35 and 40, Block 2625, and Block 2630 Lots 1 to 3 were formerly occupied by Phelps Dodge Copper, a manufacturer of insulated wires and cables. The site was registered as a large quantity generator of hazardous waste and also an inactive hazardous waste disposal site based on PCB contaminated soils. According to the PS&S environmental fact sheet, site investigation was performed in 1997 to assess impacts from the handling of petroleum products and remedial investigation activities were performed between 2001 and 2004 under NYSDEC and New York State Department of Health (NYSDOH) supervision. Site demolition and remediation activities are ongoing. Environmental concerns include PCBs, heavy metals, urban fill and oils used in cable manufacture.

Block 2635 Glenwood Power Station

Limited information was available for Block 2635. Block 2635 has been used partially as a railroad powerhouse with substations, generators, and turbines for most of the 20th century. Environmental concerns include petroleum products, heavy metals, PCBs, and urban fill.

Block 2640 JFK Marina Park

Limited information was available for block 2640. Available information shows that the block was reclaimed from the Hudson River by filling sometime between 1957 and 2001. Since 2001, the block has been a public marina and park. Fill material reputedly came primarily from ash from the city's municipal trash incinerator. If this proves to be the source, the fill material may contain cinders, slag and ash with elevated levels of both PAHs and metals.

E. THE FUTURE WITHOUT THE PROPOSED ACTION

In the future without the Proposed Action it is likely that many of the current uses would continue to occur on the subject site. New development would only occur with the actions of individual property owners. No formal applications for development have been made at this time.

In the event that projects independent of the Proposed Action were to occur on any lot that has the potential for hazardous material contamination, such development could result in the exposure of construction workers and nearby residents to hazardous materials. If such projects were to occur it would be expected that each developer would be required to undertake additional investigations and conduct remediation, as needed. Such development could result in the exposure of construction workers and nearby residents to hazardous materials. To the extent that land use remains similar to existing conditions, any hazardous materials and petroleum storage would likely continue where it currently exists.

Overall, in the future without the Proposed Project, although some development would be anticipated, there would be a lower potential for disturbance of hazardous materials, but, unlike conditions in the future with the Proposed Project (where remediation would be performed under construction health and safety plans), there would be less extensive remediation of hazardous materials.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

The Proposed Action would involve the redevelopment of the Master Plan Area into a mixed-use community with residential, recreational, and commercial uses. Development within the Master Plan Area would involve the demolition of the existing structures and excavation, disturbance, and removal for off-site disposal of much of the existing fill and soil.

The presence of hazardous materials threatens human health or the environment only when exposure to those materials occurs, and, even then, a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. In order to prevent such exposure pathways and doses, the proposed project would include appropriate health and safety and investigative/remedial measures that would precede or govern both demolition and soil disturbance activities. These measures are discussed more fully in the next section, but would include:

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and of PCB-containing equipment.
- Additional subsurface investigation, both to study sites not yet investigated and to better characterize soils to be removed for project excavation.
- Development of a Construction Health and Safety Plan (CHASP) for site remediation and excavation that would include detailed procedures for managing both known contamination issues (e.g., tank removal and soil and groundwater remediation of existing gasoline stations) and any unexpectedly encountered contamination issues. The CHASP would also include procedures for avoiding the generation of dust that could affect the surrounding community as well as the monitoring necessary to ensure that no such impacts are occurring.

EXISTING STRUCTURES

Asbestos-Containing Materials (ACM) Management Plan

Proper handling, removal and disposal of ACM is governed by federal requirements (Occupational Safety and Health Administration 29 CFR 1926.1101, Department of Transportation 49 CFR 171-173, and EPA 40 CFR 61), and New York State requirements (Labor Law Article 30 - Asbestos or Products Containing Asbestos Licensing and 12 NYCRR Part 56 Asbestos Regulations). Appropriate engineering controls (e.g., wetting and other dust control measures) to minimize asbestos exposure would be implemented prior to and throughout demolition/renovation.

Lead-Based Paint (LBP) Management Plan

If lead-coated surfaces are present, an exposure assessment would be performed to determine whether lead exposure would occur during the demolition. If the exposure assessment were to indicate the potential to generate airborne dust or fumes with lead levels exceeding health-based standards, a higher personal protection equipment standard would be employed to counteract the exposure. In all cases, appropriate methods to control dust and air monitoring, as required by OSHA, would be implemented during demolition activities.

PCB-Containing Equipment

Suspected PCB-containing equipment (e.g., transformers, electrical feeder cables, hydraulic equipment, and fluorescent light ballasts) would be surveyed and evaluated prior to building demolition or utility relocation. PCB-containing equipment that would be disturbed by the work would be removed and disposed of in accordance with applicable federal (40 CFR Part 761), state (6 NYCRR Parts 360 – 376),

and local regulations. Unless suspected PCB-containing equipment is labeled to be “non-PCB,” it must be tested or assumed to be PCB-containing and disposed of at properly licensed facilities.

SUBSURFACE DISTURBANCE

The entire project site has some potential for the presence of subsurface hazardous materials. The shallow soil has the potential for the presence of metals, SVOCs, PCBs, and pesticides consistent with urban historic fill. The deeper soil below the current and former petroleum storage sites would be expected to be impacted by petroleum-related compounds. Other contaminants may be present associated with other former industrial uses.

Detailed procedures will be required to be incorporated into future redevelopers’ construction documents to govern excavation and other activities that would entail subsurface disturbance. For the various types of materials (e.g., petroleum-contaminated soils, historic fill, native materials, or other contaminated soil), the types of commitments that would be included in the specifications (both to meet all applicable legal requirements and to minimize potential impacts) are described below. Individual redevelopers undertaking projects under the Master Plan would be required to protect the safety of the public, community residents, and construction workers, as well as the larger environment. These measures would include subsurface investigations at properties that have not yet been investigated. All work would be performed in accordance with applicable New York State and federal requirements.

Sites Not Yet Investigated

Redevelopers of lots where it has not been undertaken already, will conduct a Phase 1 Environmental Site Assessments (ESA), followed by subsurface testing to guide health and safety procedures and measures necessary to protect both workers and the community, and to indicate whether special handling or disposal of soils or excavated materials is likely to be required during development. Redevelopers would be required to prepare summary reports following the completion of each sampling program. The reports would document field activities, present field and laboratory data, and discuss conclusions and recommendations drawn from the results of the investigation. The reports would compare the analytical results with appropriate state, and federal standards and guidelines. Further investigation and/or remediation would be required to occur, as necessary, prior to and/or during construction. The protocols for further investigation and/or remediation would be presented in site-specific sampling and/or remediation plans, as necessary, which would include Health and Safety Plans (HASPs).

Construction Health and Safety Plan (CHASP)

Prior to any Master Plan Area excavation, redevelopers proposing projects under the Master Plan would be required to prepare a Construction Health and Safety Plan (CHASP) to address both the known contamination issues and contingency items. The CHASP would describe in detail the health and safety procedures to minimize exposure of hazardous materials to workers and the public, including monitoring for airborne dust and VOCs. The hazards across the Master Plan Area would be evaluated by determining the subsurface contaminants of concern and their chemical and physical characteristics, and health hazards would be considered within the potential exposure associated with the work to be performed. The CHASP would be developed in accordance with OSHA regulations and guidelines. The CHASP would designate the appropriate personnel to ensure that all requirements are implemented and that on-site personnel are qualified and have received the required training. The training would enable personnel to recognize and understand the potential hazards to health and safety, provide them with the knowledge and skills necessary to perform the work with minimal risk to health and safety, and ensure that they can safely avoid, or escape from, emergency situations. It would also define site work zones and the air monitoring necessary to identify any potential exposure of the field personnel or the public to

potential environmental hazards in the soil, soil vapor, or groundwater. The CHASP would include provisions for the identification and management of known and/or unexpected buried tanks, petroleum-contaminated soil, historic fill, or other contaminated materials that might be encountered during soil disturbance activities. An emergency response plan would also be included in the event that monitoring data indicate a potential major hazard, and protocols for reporting spills or other concerns to relevant governmental agencies would be defined.

During all subsurface disturbance work, Master Plan Area redevelopers would be required to implement dust control measures (e.g., applying water on haul roads, wetting equipment and excavation faces, spraying water on buckets during excavation and dumping, hauling materials in properly tarped or watertight containers, restricting vehicle speeds to 5 mph on the project site and covering stockpiled excavated material) to minimize exposure to workers and the public. Air monitoring would be specified dependent upon the nature of the contamination and construction activity. OSHA requirements would be followed inside the work zone for air monitoring to protect workers (who have the greatest potential for exposure because of their close proximity to the work areas). Depending upon the remediation requirements, the Community Air Monitoring Plan (CAMP) procedures of the New York State Department of Health would be implemented which would include air monitoring at the site perimeter to protect the public and would set action levels that would require increased monitoring, corrective actions to abate emissions, and/or work shutdown, as warranted.

Waste Management

The CHASP that would be required of redevelopers would also address procedures for stockpiling, testing, loading, transporting (including truck routes), and properly disposing of all excavated material. It is anticipated that the majority of excavated material would be characterized “in-situ,” i.e., sufficient sampling would be performed to classify the material (e.g., as hazardous waste, petroleum-contaminated wastes, historic fill containing construction/demolition debris, or uncontaminated native soils) before it is excavated. The extent and parameters of this testing are dependent on the requirements of the waste disposal facilities, each of which may have different requirements for representative waste sampling and laboratory analysis prior to accepting material for disposal.

This approach would minimize the need for stockpiling and double-handling of material, which can increase the generation of dust. All excavated material would be handled and disposed of properly by Master Plan Area redevelopers to comply with federal, state, and local environmental laws. Among the pertinent regulatory requirements are those found in 6 NYCRR Parts 360 through 376, which identify hazardous waste and other waste management requirements. Any waste disposal that would occur outside of New York State would be regulated by similar federal and individual state requirements.

Wastes containing hazardous materials require special handling, storage, transportation, and disposal methods to prevent releases that could impact human health or the environment. Depending on the nature of the material, federal, state, and local regulations require the use of special containers or stockpiling practices for on-site storage of the material to prevent the release of hazardous materials to the environment. The federal, state, and local departments of transportation have requirements for transportation of wastes containing hazardous materials. Facilities that receive hazardous materials require federal, state, and local permits to accept the waste, and generally require that specific representative waste sampling and laboratory analysis protocols be conducted prior to accepting material for disposal.

Petroleum Storage Tanks

All of the known, and any unexpected, aboveground or underground petroleum storage tanks that are found to exist would be removed by redevelopers of Master Plan Area sites in order to complete their proposed projects. These removals would be regulated by NYSDEC (6 NYCRR Section 613.9), and the Westchester County Department of Health, which require that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater are also subject to NYSDEC regulations (6 NYCRR Section 611.6). Article 12 of the New York Navigation Law provides notification and management requirements for spills to the waters of the state.

Groundwater and Vapor Control

Since groundwater is not used as a source of drinking water in Yonkers, the potential concern associated with this contamination is that VOCs could migrate up from the groundwater, through the subsurface, into any proposed buildings and into the Hudson River. Future Master Plan Area redevelopers would be required to incorporate elements that provide safeguards against such migration into the designs of any proposed buildings.

In addition to the safeguards that would be required elements of buildings' design, it is anticipated that levels of petroleum-related VOCs would decline over time as the onsite sources of groundwater contamination (e.g., petroleum storage tanks and contaminated soil/fill) would mostly be removed by the project's excavation activities. NYSDEC, which has regulatory control over petroleum and other groundwater contamination, may require groundwater cleanup, should any be determined to exist under future investigation.

CONCLUSIONS

Contamination in the subsurface and inside buildings (primarily related to potential asbestos and lead based paint) has been identified and is suspected. However, with the implementation by future Master Plan Area project redevelopers of a variety of measures discussed above, no significant adverse impacts related to hazardous materials would be expected to occur as a result of construction and operation of the residential, commercial, and open space components of the Master Plan. Although some hazardous materials would likely still remain in the subsurface following the full build-out of the Master Plan, with the groundwater and vapor control measures implemented by redevelopers, there would be no exposure pathways and thus no further potential for significant adverse impacts.